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VARIOLA IN SHEEP.

[Communicated for the Boston Medical and Surgical Journal.]

[THE following communication, from Dr. Benj. Cushing, of Dorchester, is of interest in connection with the history of variola. It was written by Dr. Thomas Thaxter, of Hingham, so long ago as 1811, in the form of a letter to Hon. James Bowdoin, and is of value as showing the progress of this disease as it appears in certain of the lower animals. It will be noticed that, as in man, it was considerably modified by inoculation. The subject has recently been noticed in a number of the London *Lancet*.—Ed.]

HONOR'D SIR,—Having perused the treatise you were kind enough to send me last winter, I ascertained that the flock of merino sheep which my son sent me, and which were late from Lisbon, had gotten the species of smallpox among them peculiar to sheep; the progress of which disease, and the observations made, I will communicate to you, as far as I am able.

The disorder is as distinctly marked in the sheep as the smallpox is in man. Three kinds were observed, viz., the distinct, the confluent, and the purple. The infection was communicated from one to the other in the same manner as with human beings; from coming within the atmosphere of each other at an advanced stage of the disease (at which time they have a peculiar smell); or from being within the same pen; or from feeding at the same vessels, before they were cleansed, which the sick sheep had used. I found the disease discovered itself from the twelfth to the fifteenth day after receiving the infection in the natural way.

The first symptoms of those with the purple variety were so rapid that they could scarcely be marked from one stage to the other; but they every one appeared to be much swollen all over, with hard and laborious breathing; and they died very soon, with a dark appearance of the skin, similar to that in man.

The confluent and distinct varieties were more marked, and gave greater opportunity for observation. In the first attack, the sheep

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inclines to a solitary place in the yard, and keeps working her mouth and tongue, as if tasting some disagreeable substance. But, though not inclining to ruminate, she will not altogether refuse food. She soon begins to rub her head against the fence or wall, and to have a discharge from the nose, like those first affected with a cold. The eyes appear swollen, the ears fall, the head hangs down, while the body is generally drawn up. In about three or four days, sometimes not till the fifth or sixth, they pretty much refuse to eat, and then appear to have very sore mouths and throats, so that eating must be very painful. They are very thirsty, and, after drinking, manifest considerable distress, especially if allowed to take more than a pint.

An examination of those with the confluent kind discovers spots, from the size of half a dime to that of a dollar, risen on the skin somewhat like a ringworm, vulgarly so called, but without inflammation or contained fluid; nor did these spots in my sheep ever appear to have much, though some of the patients lived to the ninth or tenth day. At this advanced stage of the disorder, there was a copious discharge from the nostrils, of a mucus, sometimes white and sometimes yellowish.

The symptoms of those with the distinct kind were at first much the same, only less in degree. About the third or fourth day, the pox might be discovered in hard, prominent red pustules between the shoulders and breast, on the dugs, and also on the tail. In three or four days more, these pustules appeared flattened, and to contain a fluid; but, on opening them, you would be disappointed as to the quantity, seldom being able to obtain a drop where you might have expected several. These pocks would afterwards produce a dark scab, which would remain a number of days before separating, and would be found all over the sheep, among the wool, causing it to fall off after a while.

A few of the sheep that had the distinct kind mildly, after three or four days, would ruminate at times; but seemed to have exacerbations of the disease, which they expressed by uneasy, restless motions, as if in pain. Several of the sheep, while the disorder was in progress, and others, after it appeared to have subsided, would be taken with a paralytic affection of the limbs. The lambs especially would sometimes be attacked with this affection as the first indication of their being ill. The sheep, throughout the whole disorder, had great sensibility to being handled, and, particularly, to being pulled by the wool; and, during the last stages, inclined to huddle together, as if for additional warmth.

I tried several methods with them, such as early bleeding, purging with neutral salts, administering castor oil, senna, and thorowstock, with glysters; but without any permanent effect. In some instances where the sheep appeared costive, these remedies gave temporary relief; but, in general, the alvine and urinary evacuations were performed without artificial assistance. I also used blisters between the shoulders and breast, applied onions to the throat, and gave wa-

ter-gruel and teas made of mullin, saffron, juniper, &c., with injections of vinegar and oil into the nose to increase the discharge, but found little satisfaction from any mode of treatment.

I had a merino ewe, imported in November, which lambed on January 27th, having a good udder of milk, and a healthy lamb. On the 30th—making between eleven and twelve days from the time of her being among the diseased sheep—she began to exhibit signs of indisposition. She soon refused to nurse the lamb, and appeared to have her bag hard and swelled, as if with milk. The lamb died Feb. 6th, and the sheep the 7th, making between twenty and twenty-one days from her first being where the disorder was. In February, I first discovered that the disease had got among my native sheep. Nine out of twenty-two ewes were taken within two days, six of which died—one in twelve hours, one in thirty, and one in forty-eight, after first discovering them to be unwell. The others lived—one nine days, one sixteen, and one, after losing both eyes, expired on the thirtieth. Of the two last, one—on being opened—was found to have had a suppuration near the base of the heart, the other a suppuration in the lungs, which I have found to be the case, on dissection, in a number that had got through the pox, but died in some three months or more afterwards, having ulcerations of the lungs and hydatids in the liver, with tubercles frequently interspersed with both, which tubercles were disposed to form, some with water and some with pus.

My first endeavor to stop the disorder among the sheep, was to separate the well from the sick, placing those supposed to be healthy in healthy barns. But whether my man who attended to this duty carried the infection in his apparel from one barn to the other, or carelessly brought some of the vessels that the sick sheep had eaten from, to feed the well in, I cannot say; but when I thought a stop was put to the disorder, from the well sheep having been more than fifteen days without any indications of sickness, all at once four new cases were perceived to occur, three of which terminated fatally, from the fifth to the ninth day. During this time, I found two sheep which had the distinct kind in so mild a manner as hardly to be perceived; and accordingly removed them before I thought they had communicated the infection to the remaining number, which was seven; believing that, in case they had received the infection, they would all die, as they were near the time of lambing.

At this point, I took matter from the pox of the infected sheep, and inoculated the well ones, some of which lambed just before, and others soon after, breaking out. The lambs, twelve in number, I inoculated at three or four days old. All, lambs as well as sheep, did well, and have not since appeared to pine, or to be in any way disordered, although I did not do anything for them, except to keep them carefully as to air and diet. The sheep, excepting in one instance, did not appear to have the symptoms upon them more than two or three days. After this time, they would eat and ruminate

naturally and freely. Some, one would never perceive to have the disorder but from the circumstance that their incisions contained a good pus, and from finding a few pustules upon them, after some days.

In the instance of the one the most and the longest affected, the part inoculated inclined much more to indirect inflammation and to sphacelation than suppuration. The rest discovered their having taken the disease by pus forming in the incisions, on the second, third, or fourth day (the earliest appeared to be the best cases), so that you might collect several drops, and this you might continue to do for some days.

The mention of the appearances last enumerated leads me to think there must have been some mistake made by the printer of Mr. Flag's treatise, where it is said, that the smallpox by inoculation appears in two days, and that in the natural form in from fifteen to thirty. Except in the pus found in the incisions, in no instance did I discover the disease by inoculation, nor did the pox come out and form a crisis in less than eight, ten or eleven days, though some of the sheep would eat and ruminate, and, unless the teats were sore, nurse their lambs the whole time, while others appeared to be ill for two or three days. In the natural way, I never could find an instance of the disease being more than fifteen days before discovering itself by the symptoms; and though in general one would find the pox of the distinct kind, the patients would be ill for fifteen or twenty days longer, and would not appear quite well or thriving in less than thirty or forty.

It is singular that in no instance—whether the disease was taken the natural way or by inoculation—did I know of the ewes casting their young; not even in those cases where the form of the disorder was the confluent or the purple. In the few instances in which my sheep lost lambs, I attributed it to their being handled, when gravid with twins or triplings. I noticed that the disorder did not lessen the milk, at least if the sheep was not reduced by time. I also observed that there was less disposition* for a fluid to form in the pustule than in the human subject. From frequently handling the lambs, I found that they perspired very freely on the belly near the groins, and were apt to have the testicles affected. I had no opportunity of examining an old male. All under my observation were ewes, in which I could discern no difference, whether the patient were nursing, gravid, or barren.

Thus, Sir, I have given you a succinct history of the disease; and, from the observations made, should recommend immediate inoculation—let the season or condition of the sheep be what it may—whenever the disorder gets into a flock.

With respect,

Your humble servant,

Hon. J. Bowdoin.

THOS. THAXTER.

* The word appears to be disposition, deposit, depression, as near as can be ascertained; disposat, it looks most like.

ON THE DISINFECTING TREATMENT OF TYPHUS, ERUPTIVE AND ENTERIC.

BY JOHN HJALTELIN, M.D., INSPECTING MEDICAL OFFICER OF ICELAND.

[Concluded from page 322.]

I MUST now describe my active or positive treatment, but before doing so must make some remarks on the arguments which guided my mind in its adoption. For this, however, it will be necessary to go back a little, and show how my reflections were matured.

After having read much of what had been written on eruptive and enteric typhus during the last twenty years by the best writers in England, America, France, Germany, and Scandinavia, I perceived that the widest discrepancy of opinion existed in reference to both theory and treatment. Many of our best physicians are of opinion that typhus fever originates from a specific poison, and some of them believe that this poison is of the same kind in the enteric as in the eruptive form of the disease. This opinion has in Germany been maintained by Professor Canstatt, one of the most learned medical writers on the Continent; it has, moreover, found its advocates in England, as may be seen from several articles in *The Lancet* and other medical journals of Great Britain, although there are some writers who maintain a different opinion—among others Dr. Stephen Ward (see his "Clinical Illustrations of Diseases of the Abdominal Viscera," alluded to in *The Lancet* of 1858, pp. 310 and 359). I can scarcely think, however, that physicians who support the latter opinion have witnessed any epidemic of eruptive fever upon a large scale; had they done so, it could not have escaped their observation that at least patients attacked by the eruptive form of typhus are at the same time more or less affected with diseases of the abdominal viscera, especially the colon and ileum, and that in many cases of this nature—indeed, more frequently than is generally believed—there evidently exists an affection of the mucous membrane of the ileum near its termination in the cæcum. I still remember an extensive epidemic of eruptive typhus that broke out near Copenhagen in the year 1838, the patients of which were brought into the so-called common wards of the hospital in the town, and treated by Professor Wendt, one of the principal physicians. I was then, as a young practitioner, directing especial attention to the course of that disease, and I observed in the bodies of some of those who died considerable enlargement of Peyer's glands. In our epidemic I found, on the contrary, that a great many patients affected with eruptive typhus displayed preternatural sensibility in the right iliac region, although from other symptoms there could be no doubt as to the true nature of the disease. We know, moreover, that the physicians of Paris have witnessed epidemics of this disease, in which gastro-intestinal irritation exists in the majority of cases, and that they have regarded this state of the intestinal canal as the essential cause of the disease. I must here add that, in the many

hundreds of cases that have fallen under my cognizance during the last years, I have found very few patients entirely exempt from congestion of the mucous membrane of the colon and the ileum.

Dr. Stephen Ward says, in his very interesting "*Clinical Illustrations of the Diseases of the Abdominal Viscera*," "I can quite conceive the possibility of the specific exciting poisons of typhus and enteric fever co-existing in any given locality, and; as a consequence, the possibility of one or two individuals residing in such locality being affected with typhus, the other with enteric fever, or of one individual being affected with the two diseases at once." He then says, further, "that most medical men in large towns will have seen the co-existence of scarlatina and measles." This may be, but I doubt very much whether scarlatina and measles have been observed in the same patient at one time. I am, moreover, very doubtful about the distinction that this physician and many others have made between the rose-colored and the rubeolate or mulberry eruption; and the marked difference of opinion existing at present among the physicians of the Continent apparently demonstrates that on this subject there has been nothing irrefragably established. In the typical form of the disease in which the eruption appears, the number and magnitude of the spots will be found to vary considerably. I have seen them pale, roseate, dark red, and almost black. I cannot, therefore, agree in attaching, as many learned authors do, any very high importance to the precise nature of their tint. Professor Canstatt, who has written a most accurate description of all the cutaneous eruptions of exanthematic and enteric typhus, and who has observed those fevers in all parts of Europe, confesses that the colors of the true exanthema in eruptive typhus may very often be the same as that of the petechiæ so often seen in enteric typhus. If this be conceded, the diagnosis will chiefly depend on the degree of elevation and size of the spots, and the anteriority or posteriority of their appearance; for in genuine enteric typhus the petechiæ will seldom be seen before the ninth day. Be this as it may, I think that we must rely on phenomena of a more invariable character to gain any close approximation to the truth.

Probably most physicians who have seen and treated the eruptive and the enteric typhus will agree with me in considering that the symptoms as well as the causes of both these diseases are nearly the same. Both may arise from putrid effluvia, overcrowding, imperfect ventilation, bad water, uncleanliness, innutritious, ill-dressed, or unwholesome food, or too frequent use of animal food. To these may be added an irregular life, exhaustion, or contagion. I have no doubt of its contagiousness, although I am aware that this is sometimes denied. It has, however, been clearly demonstrated in a monograph emanating from the pen of the eminent Danish physician, Dr. Trier. In Iceland I have found so many proofs of this, that a complete enumeration of them would protract

this paper to a tedious length. Although Dr. Stephen Ward and some English physicians doubt or deny it, I am myself prepared to advance the same proposition as Professor Canstatt, namely, that the contagiousness of enteric typhus can be contested by no unprejudiced observer.* On the Continent, with the exception of perhaps a small minority in France, there exists almost an entire unanimity of opinion.

An accomplished English writer, Dr. Charles Murchison, Assistant Physician to the King's College Hospital, and to the London Fever Hospital, in his most interesting contributions to the etiology of continued fever, is of the same opinion; for he says, in *The Lancet* of 8th May, 1858, p. 464, "Typhus is eminently contagious. Typhoid fever is also contagious, but in a more limited degree, and possibly through a different medium." This is my opinion also. Typhus usually arises from inhalation of bad air in overcrowded dwellings, but typhoid from a great amount of inorganic impurities in water, or an immoderate use of animal food, especially if it be of an unwholesome character, and the persons taking it have digestive organs naturally delicate. This, however, does not in any way disprove the identity of the typhus poison and the typhoid—for we know that decaying organic matter may engender either.

If we look closely into the predominant symptoms of both diseases, we shall find these symptoms are very like, and have only to suppose that the as yet unknown organic poison acts in typhus especially upon the brain, the lungs, and the skin, while in the typhoid fever it has acted more upon the mucous membrane of the ileum and cæcum, from which there arises an hyperæmic state in the Peyer's glands, many times terminating in inflammation, suppuration, and gangrene. That this is really so I have been convinced of in some cases of our typhus, where the cutaneous exanthema did not make its appearance on the fourth or fifth day. In such cases I generally found more or less pain by pressure of the hand in the right iliac region, followed by diarrhœa, or with ochre-yellow pea-soup-like dejections. In some of these cases exanthematic eruptions were seen on the breast at the end of the fifth day, but it seldom then made its appearance on the extremities.

Besides the aforesaid, one symptom convinced me of the identity of the typhus and typhoid poison, and this was the truly specific odor exhaled from the patients in both these diseases. I have read that this same odor has been remarked by the genial medical writer, Dr. Hilario Barlow; for he says, in his "Manual of the Practice of Medicine," page 706, "Besides this, there is an odor peculiar to different fevers, as typhus, scarlatina and smallpox." The odor of smallpox is very well known, and has even been adduced amongst the most characteristic signs of this disease by the old medical writers. I still remember that I, as a young medical

* Handbuch der Medicinischen Klinik verfasst von Dr. C. Canstatt. Erlangen. 1847: Zweiter Band. Page 572.

student at Copenhagen, was obliged to remark, in every journal of those affected with smallpox, whether there was a "halitus variolosus" or not, in order to be able to give a right diagnosis of the fever before the eruption. The odor of smallpox is very like the odor of salted herrings; and the odors of scarlatina, the measles and the Asiatic cholera are so specific, that we must wonder they should not already have been well described and put down in our handbooks of medicine as one of the most characteristic diagnostic symptoms of these diseases. I think Dr. Hilario Barlow quite right in advising the young medical students to cultivate all their senses, and especially the sense of smell, for had this been done in an exact manner, and with due precautions, there could be little doubt about the identity of typhus and typhoid poison. I know very well that this is a more easy trial in small Icelandic cottages than in the large and lofty wards, and it is on this account that I by the circumstances in our country have been more able to do so than my medical brethren in foreign countries. The odor of the typhus poison is so decided, that it is well known even among the peasants in this country, and they have given it the name of typhus odor, or of "Söttarlykt," which means the "fever odor." When people come to ask my visit to one who is seized with typhus, they generally say, "We wish very much you would come to see the patient, for he is very bad off, and there is a strong fever odor about him." Sometimes they said, "Our patient is not very sick, but we are afraid of him, because there is a strong fever odor about him. We wish, therefore, very much that you would come and see him, because it is most likely the typhus, and we might also be sick by the contagion." It is very natural that in the small Icelandic houses (where there generally is allotted only about one hundred cubic feet of air for each individual), the typhus odor must be very strong and penetrating, and so it really was, for it might somewhere be called insupportable. I now tried if I could make out any difference between the odor of eruptive typhus and that of the enteric typhus, but, after many repeated trials, I came to the same conclusion, namely, that I could not find out any real difference. The odor was, of course, strongest in the overcrowded dwellings; but it was strong enough to be clearly perceived where two or three patients were in the same room of the larger ones. When the rooms were well ventilated, the odor would be weaker, but it never quite ceased unless strong and effective disinfecting compounds were used; it was, therefore, very often necessary to continue them for a longer time, day and night, before the odor was wholly destroyed. Amongst all the disinfecting compounds I tried to this end, nothing was so effective as the iodoform; but its high price often prevented my using it as a disinfecting remedy for the rooms. Chlorine gas and bromine came next, and I found Sir William Burnett's chloride of zinc solution very serviceable. In the mean time, I found out that the chlorine gas and the bromine were nevertheless to be used with great caution, in order that they should

not occasion cough, or affection of the lungs, when the air in the sick-room was too strongly impregnated by them. This effect was never seen, either with Sir William Burnett's solution of chloride of zinc, or with the iodoform, and I therefore generally used one of these last-named disinfecting substances, or charcoal. It was a fact worthy of reminding, that during the highest state of the epidemic in the spring 1860, there seemed to be a specific character of the air. The air would, namely, in the dwelling-rooms, very soon be corrupted if the windows were not thrown open many times a-day; and there was, I dare say, a bad "constitutio aerica;" but whether this was originated from the calm and the high barometer pressure which prevailed at the time, or by a want of electric tension in the air itself, I cannot tell. I have once before, in epidemic cholera, observed the same phenomenon, and, as far as I can remember, it has also been observed in this country during malignant influenza epidemics. The older physicians had a strong belief in the bad effect of what they called "constitutio aeris adynamica," and they believed that many malignant diseases might only arise from that cause; but I am inclined to look upon such a bad air-constitution only as a co-efficient cause of the malignant epidemics.

Having made many experiments with the aforesaid disinfecting compounds, I very soon found out that they did not only destroy the odor of the typhus poison, but would also prevent other persons, who were obliged to remain and sleep in the same room as the patients, to be infected with typhus; and it, therefore, very soon became an incontestable fact, that these disinfecting remedies would not only destroy the odor of the typhus and typhoid poison, but that they did also destroy the poison itself.

During this time I made some experiments to know whether the chlorine gas and chlorine water would destroy the vaccinia or not, and all these experiments went out in the affirmative. It is well known that one Dr. Schlegel, in Prussia, made many trials to destroy the contagion of Asiatic cholera during the years 1831, 1832, 1838, 1848 and 1849, and that he succeeded (see *Jahresbericht ueber die Fortschritte der Heilkunde*, 1849, von Dr. Canstatt and Eisenmann, p. 134); and it is, moreover, said in the *London Medical Gazette* for October, 1849, that Dr. W. Reid made the same experiments with the best success.

The renowned Dr. Eisenmann, in Germany, tried chlorine water in smallpox, and succeeded very well indeed. I was during three years the superintendent physician to the quarantine for cholera in Denmark—for the years 1848–52 inclusive—and during this time I made some experiments with chlorine gas on those that came into the quarantine from infected harbors, and seemed to be infected by the contagion, and sure it is, that cholera did never spread from that quarantine, but broke out in Copenhagen half a year after the quarantine had been abandoned by law.

I now made up my mind and resolved to try the internal use of

the different disinfecting remedies. I could do this with the more hope of good success, as I had seen chlorine-water used internally against the enteric typhus in Berlin, and as I knew that Professor Schönlein, the learned physician to the late king of Prussia, had formerly, in his clinical lectures on typhus and typhoid fever, recommended this remedy.

I have never been any great admirer of the "nothing-doing" or the so-named expectant practice, and I have seen plenty of its sad results. I must frankly confess that such a behavior as is often recommended by the expectant physicians is strongly against my feelings, where any hope may be to do something positive, and I wish sincerely that our modern expectant medical practice might, as soon as possible, be transformed into a real and a more positive practice; but I think that a positive practice ought always to be built upon sound and exact physiological and chemical principles.

There is now-a-days, as before mentioned, even amongst the learned physicians, a general belief that we ought to allow the typhus and the typhoid fevers to run their own course undisturbed by our art, only putting some physics against its most fearful symptoms, in case of need; but, notwithstanding the great respect I owe to my learned brethren, I think this is a great mistake which ought to be abandoned as soon as possible. The most of the physicians of our times admit the existence of the typhus and typhoid poison; but, in so doing, it seems not very consequent to tolerate a poison acting upon the system without trying to destroy it, if that is thought to be possible. Should we not, for instance, find it a great mistake, if we in a poisoned patient only would have the system itself to act against the swallowed poison? Of course, we shall in every instance of poisoning observe certain phenomena of the poisoning effect, and we may always find that the system will show a reaction against the poison itself, and this may then cause a certain succession of phenomena in some way very like that which happens during the action of the typhus poison on the body, and the reaction of the system against the poison. It therefore seems to me that the effect of the typhus and typhoid poison can be compared with certain narcotics acting upon the system—viz., the action of some stupefacientia and deliriantia on the brain and the nervous system. Now as it would not be right or advisable to do nothing in case of poisoning by strychnia, morphia, aconitina, atropina, or other vegetable poisons, so I think it not quite right to do nothing against organic poisons, in whatsoever form we might have to deal with them. It is true that the typhus and typhoid poisons may be generated in the system itself; but even in that case, I think we ought to do something in order to prevent such a dangerous accident; this seems also to be accepted by all medical men, at least to a certain degree, and all our sanitary measures are invented and tend to that purpose. But notwithstanding this, there seem still to be several circumstances in this respect not as yet well taken into due consideration. The

cleanliness in our dwellings and rooms in every respect is certainly a "*conditio sine qua non*," if we shall hope to get rid of fevers, but I think that our body, and especially our stomach and bowels, ought also to be cleaned in case of need. I know very well that purgative medicines may be abused, and are in truth often indiscriminately administered; but this, I think, is a common fault in our days, and has nothing to do with the right use of them. Sir Henry Holland, who, in his *Medical Notes and Reflections*, so eminently and clearly has treated this subject, and warned against the abuse of purgatives, says, page 454, "In truth there are cases where the bold and steady persistence in this method produces effects attainable in no other way. Such is especially the fact where the head is the part affected;" and he adds afterwards, "or, again, where the body is disordered by certain morbid matters collected and circulating in the blood, the removal of which can thus only be speedily and sufficiently obtained. The latter case, of which I have spoken more at large elsewhere, is one of much importance in pathology. I may describe it briefly here, as that attested in practice by the very large and long-continued discharge of dark grumous matters, usually termed bile, and understood to come from accumulation in the liver; but which, I doubt not, to be secreted in great part from the membrane or glands of the intestines, and to be a gradual separation from the blood of matters noxious to the system." These remarks of this able and learned practitioner are worthy to be remembered and brought into use in due circumstances. I remember very well when I was in Germany and Scandinavia, that the doctors of these countries said, "the man was seized with gastric fever, but this fever is now becoming a nervous one." Those so-named nervous fevers were nothing but the latter stages of an enteric typhus, which, in its premonitory and first stage, had shown predominant symptoms of what we generally term gastric state (*status gastricus*), and this, I think, is a very common accident in the most epidemics of this fever. It is remarkable to see how the names "*febris gastrica*, *febris biliosa*, *febris mucosa*," have disappeared from the newer hand-books on practical medicine, and are now substituted by the name of enteric typhus and even relapsing fever, and this seems to indicate that our names for fevers are not very much to be relied upon. It is generally believed that the enteric typhus cannot be curtailed, but how can we know that this is really so? I observed many facts in this epidemic that convinced me of the contrary truth; many patients who had all the premonitory symptoms of an enteric typhus, even with some diarrhoea and painful sensation by pressure of the hand in the right iliac region, recovered after some full doses of calomel, which then never failed to produce very heavy dejections of dark or dark-green grumous matter of the most offensive odor. The same grumous matter was also seen to continue for some time in those patients where the disease was either strong or advanced too far to be cut short by proceeding thus; but I must here remark,

that in all instances of our typhus and typhoid fever, purgatives produced a good effect, and even where diarrhœa was observed from the beginning of the fever. I, therefore, wholly agree with Professor Canstatt, who, with his great experience, has found that diarrhœa in the beginning of enteric typhus does not at all contraindicate the use of purgatives. Meantime, I must confess that in speaking of the good effects of purgatives in typhus and typhoid fever, I refer this chiefly to the outset or the first stage of these diseases, and I think that in doing so, I will agree with many of the experienced authorities in our century. Sir Henry Holland says, in his chapter on the abuse of purgative medicines, "There can be no doubt of the fitness of using purgatives in the early stage of most fevers."

It is a well-known fact, reported in many of the better works on practice of medicine, that the most learned German physicians have strongly recommended the use of calomel in the outset of typhoid fever, and amongst those I will only mention the names of Professors Schönlein, Canstatt, Sicherer, Rösch, Scharlau and Richter; and it is, moreover, well known that Dr. Labarraque cured 28 out of 30 patients affected with enteric typhus by his "Liqueur de Labarraque," which was nothing else but a saline purgative. In short, I was formerly so strongly convinced of the good effect of purgatives in malignant fevers, that I always made a bold use of them in our epidemics, and got by my experience to that point of evidence, that I at last looked upon them as quite indispensable, both in eruptive and enteric typhus. I was of course led to this by long and melancholy experience; for I always found that when purgatives had been either not used at all or insufficiently administered, I was, without exception, in the latter stages of those fevers, sure to meet with the most malignant symptoms, as meteorismus, continued fœtid diarrhœa, malignant ulcers in back and on the hip-joints, the greatest nervous depression, stupor, and gangrene of the lungs.

Regarding the use of emetics I was much more cautious. I know very well that they are still used by many physicians in these diseases, and are, of late, even recommended by the very highly experienced Dr. Jackson, in America (see the *Association Medical Journal*, 26th January, 1856, p. 69); but, nevertheless, I have very little confidence in their use in typhus and typhoid fever, except in a very few cases, when, in order to clean the stomach from impurities, there may be a rational demand for them. When I was in Copenhagen I saw them seldom do much benefit; in our epidemics it has been the same. Many physicians formerly believed that they might curtail the typhus and typhoid fever, if they were duly given in the outset of these fevers; this may sometimes have happened, but I think it in many cases rather to have been a result of their purgative effect than the emetic virtue. For our epidemics they had many times been called in use before my arrival to the sick, but I very seldom

saw any good effect of them, for they generally weakened the patients and never curtailed or mitigated the fever.

After what has now been said, it will be easy to guess the indications for my disinfecting treatment of typhus and typhoid fever, which were—

1st, To prevent overcrowding in the farm-huts and cabins as far as possible, where this in any way could be done.

2d, To have the windows thrown open as often as the season would allow it, and make holes for ventilation where this could be most effectually done, for purifying the air.

3d, To destroy every offensive odor about the sick, and even the smell of the sickness itself.

4th, To introduce cleanliness in every respect.

5th, To clean the bowels of the patients as soon as possible in an effective and perfect manner.

6th, To destroy instantly the odor of evacuations from the patients.

7th, To use internally disinfecting medicines in a bold and consequent manner.

8th, To support the strength of the patients by easily digestible but nourishing foods.

The first indication could very seldom be fulfilled, but it was done whenever possible. The second indication was, for the most part, tolerably executed, especially when the people got afraid of the contagion, and therefore dared not shut their windows, but followed for the most my advice in opening them.

The third indication was, after the lapse of some time, when the people had seen the good effect of it, boldly executed; and the remedies applied to this purpose were the aforesaid disinfecting compounds—viz., chlorine gas, Sir William Burnett's chloride of zinc solution, iodoform and charcoal.

The fourth indication met with many obstacles, and could seldom, on account of bad habits or poverty, be executed as it ought to have been, or would have been, if cleanliness were a more common virtue in this country.

The fifth indication was fulfilled by administering a full dose of calomel, sulphate of magnesia, or sulphate of soda, all in large and repeated doses, according to age and other circumstances. The calomel was generally given in a dose of ten to twenty grains every day or every second day, until the foetid odor of the dejections was gone. As the effect of this treatment, I may mention the lessened tenderness in the right iliac region and in the whole abdomen, lowering of the pulse, diminished headache, and more clear consciousness of the mind, when from the beginning there had been stupor or coma. In some cases sulphate of magnesia was given in a dose of a half or one ounce, until I was pretty sure of the bowels being well cleaned, and all bad odor of the evacuation had disappeared.

In order to execute the sixth indication, sulphate of iron was generally put into the water-closets before they were used; but, in some cases, chloride of lime was used for the same purpose. By these disinfecting compounds no odor of the dejections could be felt, although the patients had very large and noxious-smelling evacuations. I think that every one who knows the small and dirty Icelandic huts will agree with me that this is a quite indispensable proceeding to purify the air, where many patients are crowded together in small rooms. This method seldom failed to produce a happy effect upon the patients. The seventh indication was executed in several manners. If the patients were supposed to have strong and healthy respiratory systems, they were made to inhale iodoform or chlorine gas mixed with the air. The former remedy was most frequently used, and the good effect of it (according to my experience) is undeniable. It was in some instances given internally, dissolved in ether, and seemed often to produce a well-marked relief, and especially it was observed to check coma and delirium. The chloride of lime was never used internally, but the patients were often made to inhale the vapor of a concentrated solution of chloride of lime, which was managed in this manner:—Linen strips were dipped in the solution, and hung up to dry by the bedside, which caused a continuous chlorine gas exhalation in the room. By patients with weak and irritable lungs the iodoform was always preferred to the chlorine gas.

The eighth indication, namely, to support the strength of the patients, was fulfilled by nourishing food and decoction of bark; and this was sometimes recurred to in the third stage of the fever, in order to prevent death from exhaustion. It seems to me that many physicians are too much afraid of using nourishing diet in typhus fever, forgetting the great loss of nitrogenous compounds which this sickness, by the large excretion of urea, produces. I have seen many typhus patients in this country, who, as soon as they were able, took very nourishing food, which would never be allowed in the hospitals of Europe, recover speedily; and, comparing this fact with the languishing and protracted recovery in the hospitals, I conclude that nourishing food in the latter stages of this fever is quite indispensable.

As to the result of my treatment, I am obliged to make some remarks, and in so doing it is necessary to mention the ravages of the typhus fever in our country during the years 1859 and 1860. In the northern part of this island, and on the western shores, a good many patients fell victims to it; so that in some parishes the mortality was no less than 1 in 16, or even 1 in 14, of the whole population. In some parishes every tenth inhabitant died from the sickness; and in many places where no medical aid could be obtained, the mortality of the whole population for the year 1860 was 1 in 15 or 16. At the same time the mortality for the town of Reykjavik was only 1 in 29, and for the adjacent parish 1 in 27.

Being the whole time obliged to go from one hut to another, and, besides, to make many visits in the neighboring country, it was impossible for me to calculate the number of my patients in a perfect and accurate manner. I only know this (as aforesaid), that during the years 1858-61 I have had a number of not less than 900 cases of typhus and typhoid fever under my treatment, and that out of this number I have lost no more than 30 patients from this disease. In a neighboring parish the number of the patients was 95, and out of this number only two died. I am, therefore, inclined to believe that if my disinfecting treatment had been carried on under favorable circumstances, the result might most probably have been still more conspicuous.

It is, I think, an acknowledged fact, that the eruptive and enteric typhus are dangerous fevers; and, although some physicians believe that the eruptive typhus is less dangerous than the enteric typhus, we have in this country, during the last epidemic, proofs of its malignity, which led to the enormous mortality of 1 in 6 of the inhabitants in some places. Almost the same fatal mortality as happened here, occurred during the last epidemic in the Westmanna Islands. The physician of that place fell at the outbreak of the epidemic a victim to the typhus, and out of 400 inhabitants 40 died afterwards. In some parishes in the east part of this island it is related that the mortality sometimes rose to 1 in 3 of the affected.

Mortality of typhus is, as we know, very variable, according to the nature of the epidemic, constitution and other circumstances. In Hooper's "Physician's Vademecum," fifth edition, it will be seen, page 274, that the mortality of adynamic fevers in Edinburgh and Glasgow has very often been 1 in 10, and even 1 in 6 or 7, or as great as in some parishes of this island during the last epidemical typhus. From several articles in *The Lancet* I learn, moreover, that mortality of typhus in the hospitals of London is very often found to be 1 in 10, or even 1 in 8; and, according to Dr. Trier, of Copenhagen, the mortality of typhus and typhoid fever in that city has generally been 1 in 8, or sometimes 1 in 6. In Germany and France it is well known that the mortality from malignant fevers in the hospitals is generally 1 in 9, and sometimes 1 in 7; but in Russia, namely, St. Petersburg and Moscow, it is still less favorable, being in some epidemics 1 in 5.

It is generally accepted now-a-days, that physicians, before the determination on the adoption of a particular method of treatment, should always first inquire what would happen in this case if no remedies whatever were employed: or, in other words, if the patients were altogether left to nature, that is, to the efforts of their own constitution. Many renowned physicians will say, "The living machine, unlike the works of human invention, has the power of repairing itself. It contains within itself its own engineer, who, for the most part, in by far the greater number of cases, requires no

more than some very slight assistance of our hands," &c. This is the fashionable talk of the most celebrated physicians in our time; but I have always thought that this principle is of as little use to medicine as it is unworthy of a science which now claims the name of an "exact learning." But fashion has a strange power, and thus this "inactive treatment" is become a general rule amongst the physicians of Europe in our century. In the meantime it seems to me that the modern medicine has by this principle involved itself in some contradictions, or why do we then cure scurvy with large doses of citric acid, inveterate syphilis with large doses of iodide of potassium, intermittent fever with bark, rheumatism by repeated doses of bicarbonate of potassa, lithic diathesis and oxaluria with large doses of carbonates and strong mineral acids? Why do we at all give remedies for poisons? And if we give remedies against mineral and vegetable poisons, why not also for organic poisons? I hope that very few physicians will now-a-days deny the origin of malignant fevers from organic poison; but, if this is accepted to be true, why should we then not try by all possible means to destroy these poisons? Pure air is, no doubt, the most common destroyer of organic matter, and it is, I think, on this account that the modern ventilation has done so much good to prevent and cure malignant fevers. We may, I hope, go still farther, and clean out the organic poison from the human body by a right use of the principles of modern chemistry; but, leaving the destruction and elimination of fever poisons from the body to nature's efforts alone, we may, I think, very often be mistaken and disappointed.

Regarding the melancholy ravages of our epidemic typhus when it was allowed to run its own course, or whenever the patients were unaided by the medical interference, I can hardly doubt that my positive disinfecting treatment has been of some value, and I should indeed feel very happy if these few remarks could induce some of my dear colleagues to give it a fair trial.—*Edinburgh Med. Journal.*

OVERCROWDING OF MILITARY HOSPITALS.—In the French military hospitals 1700 cubic feet of air-space are allowed by regulation to each patient. In this country the minimum is fixed at 1000 cubic feet. And yet of our 150 military hospitals, we venture the assertion that not five per cent. allow 800 cubic feet of air-space to each patient, whatever may be their system of ventilation. In the majority 700 cubic feet is the maximum of air-space to each patient, and from this point hospitals may be instanced representing various figures in the descending scale as low as 250 cubic feet. And this last amount—little better than the famous Black Hole—is the maximum of air-space allowed in hospital buildings originally constructed for barracks, and almost destitute of ventilation. In large numbers of hospitals the beds are arranged at given intervals, without the slightest regard to the cubical area of the wards. The results of overcrowding are apparent in every hospital where it is practised, in the prevalence of low forms of fever, erysipelas, &c.—*American Medical Times.*

 THE BOSTON MEDICAL AND SURGICAL JOURNAL.

 BOSTON: THURSDAY, NOVEMBER 27, 1862.

WE publish the following letter of thanks from the Governor of the State to Dr. Gay and the surgeons who accompanied him on his visit to Washington to aid in the care of the wounded after the unfortunate retreat of General Pope. Dr. Gay's admirable report has already been published in full, and a lengthened notice of it appeared in the Journal of Nov. 6th. The promptness of the members of the profession who have so often responded to the repeated calls of Government to assist in alleviating the sufferings of our wounded men, is most honorable to the body they represent, and the dignified and well-timed acknowledgment of the Governor is an evidence of his high appreciation of the services thus rendered to the State and country.

{ COMMONWEALTH OF MASSACHUSETTS, EXECUTIVE
DEPARTMENT, BOSTON, NOV. 10, 1862.

TO GEO. H. GAY, M.D., BOSTON.

SIR,—I have received from the Surgeon-General of the Commonwealth your report made to him under date of Oct. 1, 1862, of the observations made by yourself and the surgeons who accompanied you to Washington, on Sunday, Aug. 31st, in answer to a call made by the Secretary of War.

I take great pleasure in returning to you my most cordial and sincere thanks, in behalf of the people of the Commonwealth, for the prompt zeal with which you, with the gentlemen who accompanied you, responded to this sudden call, and for the invaluable services which you were able to render to the wounded and suffering soldiers of Massachusetts, lying upon the battle field and in the hospitals, thus proving to them that, though far from home and the tender care of friendly hands, their native State was not unmindful of their sufferings and wants. Your generous alacrity has reflected the highest credit upon you, attesting alike your zeal as patriots and the humanity with which you respond to the calls of your profession.

I would thank you, also, for the elaborate and carefully-prepared tables that accompany your report, and desire through you to make my most sincere acknowledgments to the gentlemen who accompanied you on this service.

I have the honor to be, very sincerely,

Your obedient servant, JOHN A. ANDREW,
Governor of Massachusetts.

MR. EDITOR,—I take the liberty to ask whether room enough cannot be afforded on one of the pages of your Journal for such a table of French weights and measures as would enable those not familiar with them to find their equivalents in English. In the Journal of the 6th of November, page 286, is the following formula for hoarseness:—Liquid ammonia, 10 drops; syrup of Crysimum, 45 grammes; infusion of blossoms of the lime tree, 90 grammes; all to be taken in one draught. If this cured Napoleon I., some Yankee might be disposed to try it. But what is Crysimum? I do not find it in Dunglison's Dictionary, 1860, nor in Griffith's Dispensatory. I suppose that a large proportion of the readers of your Journal would require some time to trans-

late a recipe from a French apothecary. Let our students of medicine at Paris, before sending a recipe to one of our journals, translate it, if they know how; or let there be a standing table in the Journal from which every country physician may cypher out the true English.

Query. What and how much was the "Royal potion" which Napoleon took with the effect of preparing his throat for making a speech?

A READER.

In reply to our correspondent, we can only say that we are at a loss to conjecture what is intended by the word *Crysimum*, unless it be *Crysanthemum*. The latter is a mild tonic remedy, and is sometimes used in Europe in certain pulmonary affections, and its syrup might very well be combined with the other remedies mentioned above. It is possible that the syrup of orange, formerly known as *Chrysomelia*, may be the article referred to.

With regard to the employment of French terms in designating weights and measures, it may be said that all well educated physicians are supposed to be acquainted with their relative value; at all events, such a table as our correspondent suggests is already to be found in the United States Dispensatory, which is presumed to be, or ought to be, always at hand on the table of every practitioner. A *gramme* is the unit of weight according to the modern French system, and is about equivalent to fifteen of our Troy grains. A tenth of this, called a *decigramme*, according to the decimal system, would therefore correspond very nearly to our grain. The old French grain, also in use, is considerably less than our own, seventy-two constituting our drachm.

BERKSHIRE MEDICAL COLLEGE.—The Commencement exercises of Berkshire Medical College occurred on the 19th inst., consisting of prayer by Rev. Dr. Todd; reading and defending theses, by candidates; conferring degrees, by President H. H. Childs; address to the Alumni, by Dr. E. N. Bostwick; Valedictory to the Graduates, by Prof. Wm. Warren Green.

The following gentlemen received the degree of Doctor in Medicine.

NAME.	RESIDENCE.	THESIS.
F. F. Brown, A.M.,	Sudbury, Mass.,	<i>Insanity.</i>
D. T. Brown,	Danby, Ill.,	<i>Signs of Pregnancy.</i>
G. T. Ballard,	Holland, Mass.,	<i>Vis Medicatrix Naturæ.</i>
Noah Cressy,	Rowe, Mass.,	<i>Animal Heat.</i>
George Collins,	New Gloucester, Me.,	<i>Diphtheria.</i>
Nathan Camp,	Troy, N. Y.,	<i>Typhoid Fever.</i>
C. R. Davis,	Greenport, N. Y.,	<i>Progress of Med. Science.</i>
D. B. N. Fish,	Amherst, Mass.,	<i>Duties of a Physician.</i>
E. A. Hutchins,	Keesville, N. Y.,	<i>Phthisis Pulmonalis.</i>
Thomas Henderson,	Amherst, Mass.,	<i>Gun-shot Wounds.</i>
E. B. Lyon,	Woodstock, Conn.	<i>The Medical Practitioner.</i>
O. E. Ross,	Cornwall, Vt.,	<i>Hæmoptysis.</i>
W. H. Scott,	Lanesboro', Mass.,	<i>Diphtheria.</i>
D. Saterlee,	Gale's Ferry, Conn.,	<i>Gun-shot Wounds.</i>
W. O. Smith,	Durham, N. Y.,	<i>Differential Diagnosis of Thoracic Disease.</i>
J. J. Towl,	Middlebury, Vt.,	<i>Sycosis.</i>
W. H. H. Varney,	Charlotte, Vt.,	<i>Tuberculosis.</i>
Isaac Poole,	Halifax, Mass.,	<i>Death.</i>
J. S. Talbot,	Wilmington, Vt.,	

CLEANLINESS IN HOSPITALS.—The great importance of perfect cleanliness in and about hospitals is well illustrated by the following facts mentioned by a writer in the *Chicago Medical Journal* :—

"I have charge of the flag hospital, which is made up of two wards or rooms, separated by a simple board partition, and there is one curious fact in this connection which is inexplicable to me, and that is, that the mortality in the two wards is as four to one. The number of patients in the two wards differs but little, and the care and attention on the part of the nurses is the same, and I am sure that there is no want of care as to ventilation, and still four die in ward eight for every one in ward nine. Neither is there any selection of patients; they are sent indiscriminately to either ward wherever a vacancy occurs. The ventilation of the two is alike. There is only one fact that seems to bear on it, and that is, that south of ward eight there were a number of privy sinks, and as our principal winds were from the southwest the stench from these came directly through this ward. Whether this was sufficient to account for it, with the free circulation of air which was maintained, or whether it was simply a coincidence, I am unable to determine; but sure I am that it was to me a very curious fact. This difference was not only for a week, by an accidental accumulation of bad cases, but was maintained during my entire service. Many who recovered of slight ailments, remaining as a matter of comfort or convenience for ration day, relapsed and died; so that at last I allowed none to stay longer than when they were able to go to their quarters."

HOSPITALS IN SAN FRANCISCO.—One of the largest of these noble institutions is St. Mary's Hospital, under the care of the Sisters of Mercy. "This fine building," says the *Pacific Medical and Surgical Journal*, "is situated on the corner of Bryant and First streets, in the eastern quarter of our city, on an elevated and healthy site, commanding a magnificent view of the Bay of San Francisco and the surrounding country. The portion erected is a little more than half of the contemplated hospital. It now measures 75 by 150 feet on the ground, and presents a fine front, four stories in height. The internal divisions are admirably adapted for the purposes designed. The ceilings are high, and the ventilation, light, &c., have been properly attended to. There are warm, cold and shower baths on each floor, with gas throughout the building. Besides twelve large and commodious wards, furnished with all the requisites usually found in the best establishments of the kind, there are a sufficient number of private rooms neatly fitted up, several of which are appropriated to midwifery cases. Patients in the general wards are charged \$10 per week—including board, lodging, medical attendance and medicine; \$20 in private rooms. The hospital is under the professional charge of Dr. Toland, as visiting surgeon, and Dr. M. W. Lee, as resident physician. Patients occupying private rooms may, at their option and individual expense, employ their own physicians. The French and German Benevolent Societies in San Francisco have large and comfortable hospitals, established for the purpose of affording assistance to sick members."

MEDICAL EXAMINATION BY CONCOURS.—As many of our readers are perhaps unacquainted with the mode adopted in the French Hospitals and Schools in the selection of teachers and professors, we quote the following from the Paris correspondence of the *London Lancet*:

"M. Devergie, one of the physicians of St. Louis, has written an interesting letter to the papers, in which he suggests certain important modifications of the existing programme for the *concours* of ad-

mission to the Bureau Central. As one of the judges in the late examination, by which MM. Luys, Parrot, and Tamarel-Mauriac, have been called to fill the existing vacancies, he has been struck by certain deficiencies, which he proposes to remedy. 'The *concours* for admission to the Bureau Central,' he observes, 'is the most important event in the life of the medical man of this capital. It opens to him the doors of the hospital, because the medical staff of this institution are called upon in turn to fill up the vacancies which, from age, resignations, or death, may occur. The number of candidates is often considerable (as many as thirty-six or forty for one, two or three places). Nearly all have been hospital *internes*, and some have presented themselves already seven or eight times.' The examination consists of two parts, one being for the purpose of elimination, the other for that of selection. If one vacancy only exist, five candidates are reserved from the whole number by the first process; if two, eight, and if three, ten. In the first stage of the *concours* there are two kinds of probation, the one *clinical*—namely, the examination of a patient for ten minutes—followed by a clinical lecture upon the case, *without time for reflection*, the lecture to last a quarter of an hour; the other, a *written examination*, the questions proposed being answered in three hours. For the concluding trial between the candidates reserved, a clinical examination alone is resorted to."

THE NEW PHARMACOPŒIA.—Several difficulties having arisen with regard to the new Pharmacopœia, Parliamentary interference has become necessary to remove them. A bill has accordingly been brought in by the Lord President, consisting of two clauses. The first provides that the General Council of Medical Education and Registration shall be deemed to be and to have been, from the date of its first establishment, a corporate body, with a capacity to hold lands for the purposes of the Medical Act. The second directs that the British Pharmacopœia, when published, shall for all purposes be substituted for the existing Pharmacopœias, and that any Act of Parliament, order in Council, or custom relating to any of these, shall be deemed, after the publication of the British Pharmacopœia, to refer to it.—*Edinburgh Medical Journal*.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, NOVEMBER 22d, 1862.

DEATHS.

	Males.	Females	Total.
Deaths during the week,	42	32	74
Average Mortality of the corresponding weeks of the ten years, 1851-1861,	37.0	36.8	73.8
Average corrected to increased population,	81.53
Deaths of persons above 90,	0	0

PAMPHLETS RECEIVED.—Address delivered before the Medical Class of the University of Vermont, by Charles L. Allen, M.D.—Catalogue of the Trustees, Overseers, Faculty and Students of the Berkshire Medical Institution, for the year 1862.

DEATHS IN BOSTON for the week ending Saturday noon, November 22d. 74. Males, 42—Females, 32. Accident, 1—apoplexy, 3—disease of the brain, 2—inflammation of the brain, 2—bronchitis, 2—cancer, 2—cholera morbus, 1—consumption, 17—convulsions, 3—croup, 4—cyanosis, 1—debility, 1—diphtheria, 1—dropsy, 1—dropsy of the brain, 3—epilepsy, 1—scarlet fever, 4—typhoid fever, 2—hemorrhage, 1—disease of the heart, 2—infantile disease, 2—disease of the kidneys, 1—congestion of the lungs, 1—inflammation of the lungs, 2—marasmus, 2—old age, 1—pericarditis, 1—premature birth, 1—puerperal convulsions, 1—suicide, 2—unknown, 5—whooping cough, 1.
Under 5 years of age, 26—between 5 and 20 years, 10—between 20 and 40 years, 18—between 40 and 60 years, 12—above 60 years, 8. Born in the United States, 61—Ireland, 15—other places, 8.